The 2009 – 2011 State of Mississippi Strategic Master Plan for Information Technology

Published by
The Mississippi Department of Information Technology Services

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December 31, 2008

I am pleased to present the *2009 – 2011 State of Mississippi Strategic Master Plan for Information Technology.* Each year the Mississippi Department of Information Technology Services (ITS) publishes the Master Plan outlining the current strategic initiatives of state agencies as well as our approach to achieving the goals and strategies we have set to optimize information technology (IT) services for the State of Mississippi. The primary objective of the Master Plan is to establish and maintain a clear alignment of the state's IT resources with its business needs, while ensuring an optimal return on investment. ITS remains committed to strategic approaches that blend leading edge technology with enterprise collaboration.

With a focus on an enterprise-wide approach to providing IT services, ITS continues to forge solid partnerships that effectively utilize Mississippi state government resources, so all government organizations in Mississippi can fully realize the benefits of IT. The State of Mississippi continues to make significant investments in technology assets that will provide innovative, real world solutions to enable government to deliver services and manage costs. To that end, the Legislature appropriated, and the Governor approved bond funding for the construction of a new state-of-the-art State Data Center to be located at the Education and Research Center. With construction expected to be completed by the spring of 2010, this new data center will improve the use of facility floor space, leverage extra capacity across agencies where appropriate, move toward more strategic IT platforms, align systems across the enterprise, and potentially relieve technology managers of the responsibility for server management so they can focus on delivering strategic IT services unique to their agencies' missions. The full utilization of this State Data Center will better position state government in Mississippi to deliver on its priorities while maximizing the value of taxpayer dollars.

On behalf of the Mississippi Department of Information Technology Services, I look forward to our continued work together in advancing the goals and strategies presented in this plan.

Sincerely,

David L. Litchliter

David L. Litchliter, Executive Director
MS Department of Information Technology Services

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TECHNOLOGY ORGANIZATION

INTRODUCTION

Each year, state agencies prepare an IT Plan detailing budgeted projects for the upcoming three years. The agencies send these plans to the Mississippi Department of Information Technology Services (ITS). ITS evaluates all the plans and uses the information gleaned from them to:

- Inform the Information Systems Services (ISS) division of ITS of procurement or consulting assistance agencies may require for the coming year
- Inform the Data Services and Telecommunications Services divisions of ITS of agency plans that may affect the state's IT infrastructure
- Inform the Strategic Services division of ITS of agency plans to use new technologies
- Determine how agency plans affect the *State of Mississippi Technology Infrastructure and Architecture Plan* and the *State of Mississippi Strategic Master Plan for Information Technology*
- Inform the ITS Board Members of significant agency projects and initiatives
- Prepare the *State of Mississippi Strategic Master Plan for Information Technology* each year to provide an overall picture of the current efforts and the planned direction of technology in state government

ABOUT ITS

OUR MISSION…

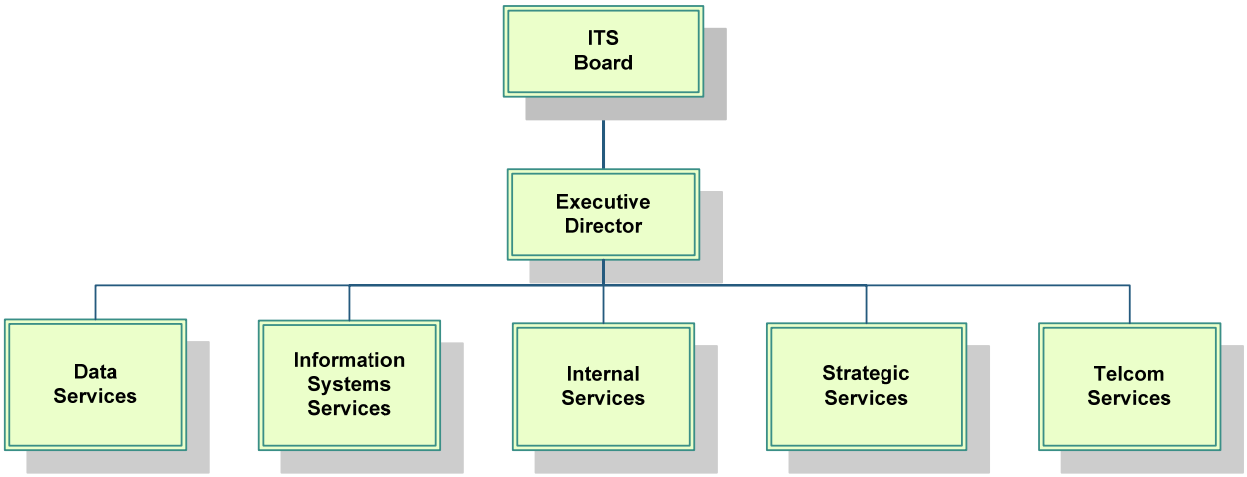
The Mississippi Department of Information Technology Services provides statewide leadership and services that facilitate cost-effective information processing and telecommunication solutions for agencies and institutions.

WE STRIVE TO BE …

SERVICE ORIENTED	PARTNERING WITH OUR CUSTOMERS TO USE IT TO ACHIEVE THEIR BUSINESS GOALS
TECHNOLOGY LEADERS	WORKING WITH AGENCIES AND INSTITUTIONS TO EXPLORE EMERGING TECHNOLOGIES AND TO SET POLICIES, STANDARDS, AND GUIDELINES
FACILITATORS	COMMUNICATING EFFECTIVELY WITH CUSTOMERS, ON BOTH AN EXECUTIVE AND TECHNICAL LEVEL, TO IDENTIFY POTENTIAL OPPORTUNITIES FOR IT IN THE STATE
RESOURCE PROVIDERS	PROVIDING THE INFRASTRUCTURE RESOURCES TO SUPPORT IT

THE ITS ORGANIZATION

The Mississippi Department of Information Technology Services (ITS) is comprised of five divisions which provide the resources needed to move Mississippi forward using IT. This diagram depicts the organizational structure of ITS.



DATA SERVICES

The State Data Center is operated by ITS and provides centralized IT resources to agencies requiring shared information, enterprise computing resources, or any other centrally managed resources. The State Data Center supports:

- The state's Wide Area Network (WAN) and Metro Area Network (MAN)
- Mainframes and peripherals shared by numerous state agencies
- Multi-tier/N-tier Infrastructure
- Email service

State agencies utilizing the State Data Center equipment and services will benefit from the following features:

- Secure physical environment monitored and operated 7 days a week, 24-hours a day, including holidays
- Fully redundant power source
- Environmentally controlled space
- Fully equipped fire suppression system with fire and water alarms

INFORMATION SYSTEMS SERVICES

The Information Systems Services (ISS) division includes the business functions of the procurement and consulting areas of ITS. ISS is staffed with technology professionals who possess a wide variety of skills and knowledge and are able to fill diverse project roles. ISS is available to work with customers on a multitude of projects such as the following:

Management Consulting, including:

- Software quality assurance and testing coordination
- Project management
- Contract management
- Application development management
- Requirements definition and business analysis
- All aspects of IT procurement

Technical Consulting, including:

- Web Site development and support
- Application development and support
- Database development
- LAN support/help desk

INTERNAL SERVICES

The Internal Services division provides the necessary support to assist ITS service areas in accomplishing their goals. This support includes:

- Administrative support to the Executive Director and the ITS Board
- Human Resources services
- Liaison with the State Personnel Board, the Mississippi Management and Reporting System (MMRS), and the Legislative Budget Office
- Agency-wide accounting services, general administration, and receptionist services

The Internal Services division also provides education services to state agencies to assist in the productive use of technology-based business tools. Training for state employees is provided at all levels, including end-users, technical employees, and agency managers. Services include:

- Curriculum development
- Designing and developing courses
- Delivering training
- Maintaining training records
- Advising customers
- Coordinating internal training
- Providing informal on-the-job training
- Providing access to the Robert G. Clark, Jr. Building lab facilities

STRATEGIC SERVICES

The Strategic Services division has several main business functions, all of which involve working closely with state government entities to plan for tomorrow's IT. These business functions include:

- Agency/Institution Planning—assist agencies and institutions in strategic planning for IT implementation
- Infrastructure Planning—coordinate the planning for the basic infrastructure framework
- Emerging Technology—identify and research technology trends that would benefit state government
- E-Rate—work with Mississippi Department of Education, the Mississippi Library Commission, federal agencies, and vendors to coordinate activities resulting in maximum E-Rate discounts on qualified technology
- E-Government— manage dynamic content and the help desk for Mississippi.gov
- Special Projects—perform numerous special projects, assigned by the ITS Executive Director, to address technology issues at ITS and across the state enterprise such as:
  - Geographical Information Systems (GIS)
  - Health IT Initiatives, including a pilot program to increase access to Rural Health care

TELECOMMUNICATIONS SERVICES

The Telecommunications Services division is the voice, video, and data network service provider for state government. These services are provided at a reduced cost to state government through volume discount arrangements. The Telecommunications Services staff assists with a variety of telecommunications services, such as:

- Voice, video, and data network infrastructure management
- Local, long-distance, and toll free services
- Customer support for order processing and bill management
- Customer support for telecommunications consulting and help desk requests
- 24-hour technical control center to monitor, diagnose, and test data communication equipment and circuits
- Facilitation of the design, installation, and maintenance of the:
  - Metropolitan Area Network
  - Statewide multi-protocol Wide Area Network
  - Shared state access to the Internet

MISSISSIPPI MODEL FOR THE ENTERPRISE

To ensure the effective and efficient use of public funds, ITS collaborates across government agencies at the state and local level to effectively manage and deliver statewide services and technologies that are beneficial, secure, accessible, and leverage the statewide shared infrastructure.

ITS articulated the seven guiding principles listed below for shared technology infrastructure in the *2008–2009 State of Mississippi Technology Infrastructure and Architecture Plan*. These principles provide the rationale for adherence, serve as starting points for difficult evaluations and decisions, and guide the design and selection of technology components.

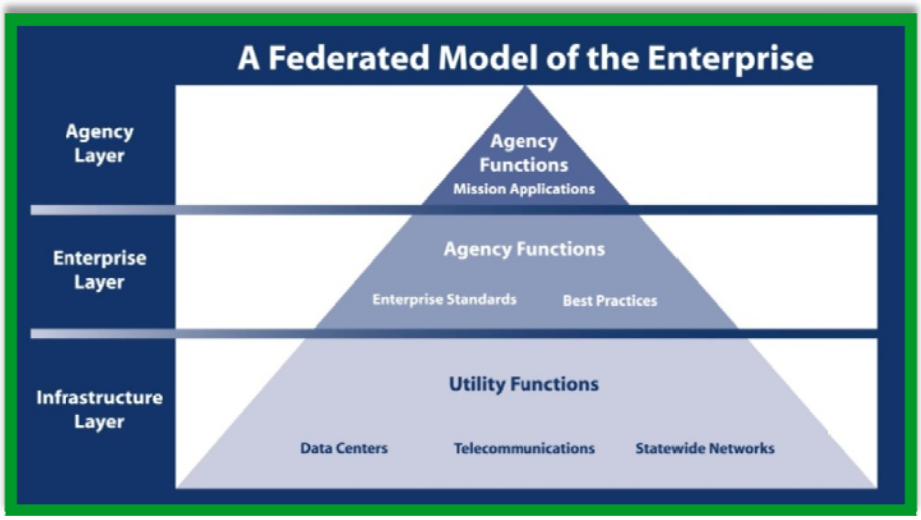
- IT is an enterprise-wide resource, therefore, IT investments will be aligned with the strategic goals of the State of Mississippi through planning and architecture processes
- State IT infrastructure and architecture will support the state's long-term business, strategies, and plans
- State IT solutions that deliver products and services to stakeholders will leverage the shared technology infrastructure
- State IT infrastructure and architecture will be adaptive and evolve to accommodate changes in business and technology
- State IT solutions will be based upon industry standards and proven technologies that leverage the state IT infrastructure and architecture
- State IT solutions will actively seek opportunities to implement common sets of shared technologies and services
- State IT infrastructure and architecture will provide a reliable, secure, and highly-available network and technology infrastructure

The Mississippi Federated Model for the Enterprise provides a framework across the government enterprise to achieve these principals and presents a vision of a flexible and innovative shared services and technology infrastructure. The model provides the foundation for the development of ITS' goals and strategies which are contained in the following section.

The Mississippi Federated Model is comprised of three layers:

- **The Statewide Infrastructure Layer** includes Managed Service Delivery, which encompasses state data center services, communications technology services, Mississippi.gov, and shared applications.
- **The Enterprise Layer** represents the areas where ITS and agencies work together to leverage Mississippi's technology investment. Another aspect of the Enterprise Layer is to ensure that effective and innovative solutions are identified and communicated broadly as best practices across the enterprise. Partnerships are an essential element of the Enterprise Layer as Mississippi government seeks to fully leverage the shared services and technology infrastructure.

- **The Agency Layer** represents agencies' business lines. It encourages creative approaches and supports an innovation-centered environment where individual agencies have the time and resources to focus on creative business solutions.



By utilizing the shared services depicted in the bottom layer of the model, and leveraging the policies, best practices, and partnerships reflected in the middle layer, individual agencies are able to innovate with creative solutions that focus on fulfillment of core missions. Deployment of innovative technology solutions will expand access to information and services, equip employees with the tools needed to accomplish their jobs, and improve decision-making within organizations.

GOALS AND STRATEGIES

As part of the IT planning process, ITS develops goals and strategies that will provide future benefits for the state. Based upon the results of the planning process, the foundation of Mississippi's 2008 – 2010 plan has been enhanced to meet identified challenges and opportunities. Selected goals and strategies have been strengthened and restructured, and new goals have been added.

In striving to accomplish the goals and strategies set forth in this plan, ITS endeavors to collaborate with state agencies, universities, public education, and other public entities in Mississippi to focus on excellence through quality of service, responsiveness, innovation, professionalism, and teamwork. A set of guiding principles for technology leadership guided the development of Mississippi's 2009-2011 goals and strategies. These guiding principles are as follows:

- Drive IT initiatives by business needs, goals, and objectives and have a sound business case before new investments are made
- Maintain flexibility with accountability in order to respond to new service needs
- Foster intergovernmental cooperation
- View IT in Mississippi government from the perspective of the entire enterprise, rather than from the perspective of a few individual agencies or jurisdictions
- Acquire, manage, and use technology resources economically and efficiently
- Technology assets will be securely held and managed, and private information will be protected
- Develop a process to share information easily within government organizations and with outside partners
- Aggregate resources where feasible in order to reduce duplication, increase efficiency and effectiveness, and increase purchasing power
- Employ technology that is flexible and interoperable so that changing business needs can be responded to quickly and efficiently
- Recognize that many agencies have substantial investments in existing technology and devise strategies that leverage those investments when practical
- Develop an IT workforce with the skills required to develop, manage, and fully utilize the state's IT enterprise

Goal 1

SAFEGUARD INFORMATION AND TELECOMMUNICATIONS TECHNOLOGY ASSETS

Strategy 1: Develop and Implement a Comprehensive Security Program

In a decentralized state government environment, lack of coordination and limited security resources make responding to a severe security threat challenging. Any strategic enterprise approach to information security management in Mississippi must address two basic issues: resources and technology infrastructure. The state must implement a comprehensive security program to leverage and manage all of its critical information and communications technology assets. Additionally, as part of the effort to develop a comprehensive statewide security program, more awareness of agency practices for planning, prioritizing, and budgeting security resources is needed to better understand and determine the effectiveness of agency security programs and practices.

Action:

- Develop a comprehensive business plan for advancing a statewide security program
- Establish effective communication and notification systems for incident and vulnerability alerts
- Establish and document incident response processes and procedures
- Establish a comprehensive security education and awareness program for both government employees and the citizenry
- Establish guidelines for routine core security system audits
- Establish the processes and procedures for the development and promotion of, and the support for security related legislation
- Promote the development of grant writing expertise within the agency to seek special funds for special projects
- Establish and maintain a comprehensive security policy document
- Promote information classification and integrity
- Establish an approach to engage agencies in proof-of-concept pilots
- Provide for topical workshops on emerging security issues
- Collect information on agency security assets and resources
- Evaluate commonalities in agency technology security architecture, assets, training, policies, and procedures
- Promote improvements to statewide security practices and state agency policies
- Establish a program to provide security expertise to smaller state agencies that do not have sufficient staff to dedicate to meeting security best practices and state policy

Strategy 2: Enhance Network Security Operations

Rapid advances in science and technology have significantly accelerated the convergence of computer and communications networks. However, these convergences and technological advances also pose unprecedented security challenges of uncertain character and scale. In the ongoing development of a statewide network infrastructure, the state must prioritize requirements for security in concert with increased functionality and efficiency. The state must ensure that government communications and computer networks are secured as part of its overall information and communications technology security strategy.

Action:

- Investigate the establishment of a shared security operations center (SOC) for state agencies and other government entities that participate in the statewide network infrastructure
- Continue to operate and maintain perimeter defense systems including firewalls, Virtual Private Networks (VPNs), intrusion detection systems (IDS), authentication, and event correlation systems
- Adopt and provide network security guidelines and standard operating procedures
- Develop a comprehensive statewide computer incident response and recovery process

- Develop and deploy a comprehensive technology security training program
- Investigate the development of a collaborative cyber security portal for state agencies and local governments
- Work with agencies regarding interoperability, scalability, cost savings, and security benefits to enhance network security

Goal 2

PROVIDE AND SUPPORT ENTERPRISE TECHNOLOGY INFRASTRUCTURE COMPONENTS TO ENABLE THE EFFECTIVE AND EFFICIENT USE OF INFORMATION TECHNOLOGY

Strategy 1: Manage the Multi-Protocol Label Switching (MPLS) Statewide Data Communications Network and Related Contracts

In late 2005, AT&T (formerly BellSouth) was awarded a new contract for telecommunication services that included the data network products and services that support the existing Statewide Frame Relay/ATM Backbone Network as well as new technology utilizing Multi-Protocol Label Switching (MPLS) to facilitate secure, redundant, high performance wide area network connectivity. The new contract allowed for all products and services to facilitate the co-existence of the networks, as well as the products and services needed to support a flexible and efficient migration from the Statewide Frame Relay/ATM Backbone Network to AT&T's MPLS network.

Action:

- Continually manage the inventory of products and services under the new contract and monitor the value provided through pricing, efficiencies, and the quality of services provided
- Establish and manage the global policies for firewalls, filtering, and intrusion detection services provided within the MPLS network
- Maintain documentation, policies, and procedures for the Service Desk, supporting the day-to-day operations of the state agency MPLS network

Strategy 2: Utilize the Investment of Current Data Center Technology Infrastructure and Resources

In recent years, many state IT organizations have seen a proliferation of redundant IT hardware and software resources implemented to address agencies' specific needs. This proliferation has resulted in agency hardware and software infrastructures with independent operations and a broad range of technical environments, service levels, and security standards. Often, these disparate environments are more expensive to maintain and operate than a federated statewide system. This fragmentation creates a duplication of effort and can present a challenge for statewide disaster preparedness and response. Fully utilizing the investment in the current State Data Center is a critical step toward helping government build a more secure, agile, and cost-effective infrastructure for the delivery of government services. Leveraging a shared-service environment will give agencies equal access to advanced technologies and will maximize state resources by leveraging economies of scale. Most importantly, by coordinating and sharing resources at the statewide level, agencies can focus more of their technology resources on agency-specific applications that support their unique missions.

Action:

- Expand the usage of Linux on zSeries and Intel platforms and migrate candidate applications to Linux environment when appropriate
- Implement Windows and Unix applications on platforms that employ virtualization technologies
- Implement toolsets to provide seamless web access to legacy data residing on any enterprise server
- Expand the use of enterprise performance monitoring software
- Expand Storage Area Network (SAN) environments by upgrading SAN fabric switches, adding tape capability, and increasing on-line storage capacity
- Re-evaluate backup and recovery software environments
- Enhance business continuity and disaster recovery processes
- Establish state-owned disaster recovery facilities
- Amend the disaster recovery agreement with IBM Business Recovery Services to add hot site support for additional Internet connectivity, email, and E-Government applications, and to add individual agency servers as requested by agencies
- Enhance the Intrusion Detection facilities to improve security trending, analysis, and reporting capabilities
- Research and acquire an Asset Management System to interface with the Service Desk system

Strategy 3: Implement IT Infrastructure Library (ITIL) Best Practices to Deliver High Quality IT Services

The Information Technology Infrastructure Library (ITIL) is a framework of best practice approaches intended to facilitate the delivery of high quality IT services. ITIL outlines an extensive set of management procedures intended to support businesses in achieving both quality and value for the money invested in IT operations. These procedures are supplier independent and have been developed to provide guidance across the breadth of IT infrastructure, development, and operations.

Action:

- Realize benefits from the implementation of ITIL best practices for Incident Management, Service Request Management, Problem Management, and Change Management
- Refine the design of the Service Desk system to allow for a single point of access for all customers – a "one stop shop" for all problems, questions, and answers
- Enhance the Service Desk system to allow users or monitors to notify ITS of any problems encountered during their interaction with ITS services and get rapid feedback on the correction of problems
- Provide for centralized knowledge and consistent service to build confidence within our customer base that the Service Desk will be able to resolve problems in a faster manner

Strategy 4: Assist Agencies in Efficient and Cost-Effective Usage of Telecommunications Services

Statewide voice communications is provided for state entities and local governing authorities within the Capitol Complex, the greater Jackson area, and across the state, though a variety of communications services. Access to the Public Switched Telephone Network (PSTN) for local and long distance calling is provided through premises-based PBX trunking, business lines, and Centrex services statewide. Voice communications in the Capitol Complex is provided through a centrally managed S8700 Series Communications Server (PBX).

Statewide access to voice and data communications is provided for state entities and local governing authorities within the Capitol Complex, the greater Jackson area, and across the state, though a combination of vendor contracts and directly managed services. The current contract with AT&T for statewide voice and data communications leverages the state's aggregate buying power to ensure the best possible rates and universal service offerings are available to government entities. This long term contract includes access to local and long distance telephone services, dedicated Internet, broadband data network services, and router management services. Telecommunications services provided directly to agencies within the Capitol Complex include access to the Capitol Complex fiber network, telephone system, voice mail, and high-speed network connectivity to the State Data Center.

Action:

- Provide agencies and institutions throughout the state with cost-effective telecommunications services (voice and data) that support the missions and objectives of state government
- Provide agencies and institutions with statewide access to the Internet and computing resources through the state's shared data network infrastructure
- Continue to enhance the state's communications infrastructure (voice and data) to expanded services and provide communications access to state agencies in the Capitol Complex and throughout the state
- Perform annual needs assessment and upgrades to state communications resources at the enterprise level
- Continue to monitor, enhance, and modify all telecommunications networks to maximize utilization and decrease operational overhead
- Continue to migrate and consolidate legacy vendor billing for telecommunications services to state approved contract
- Manage the implementation of technically sound and cost-effective communications platforms at all newly constructed or renovated facilities by continuing established inter-agency policies and procedures
- Coordinate moves of communications services for all agencies impacted by planned new building and renovation activity
- Provide value-added services to our clients such as end-user training, enhanced billing services, system administration, network monitoring, and on-going project management
- Provide hardware, software, and personnel resources necessary to support the users of the state enterprise voice and data infrastructure

- Examine security functions and services for core voice communications platforms
- Implement Voice over IP where appropriate

Goal 3

DEVELOP AND PROMOTE ENTERPRISE SOLUTIONS TO MAXIMIZE THE BENEFITS OF SHARED TECHNOLOGY SOLUTIONS

Strategy 1: Develop and Implement Enterprise Remote Sensing (RS)/Geographical Information System (GIS) Solutions

House Bill 861, passed during the 2003 Legislative Session, created the Mississippi Coordinating Council for Remote Sensing (RS) and Geographic Information Systems (GIS). The Coordinating Council is tasked with establishing and enforcing policies and standards to make it easier for RS and GIS users around the state to share information and to facilitate cost-sharing arrangements to reduce the costs of acquiring RS and GIS data.

Specifically, ITS was charged with the responsibility of bringing about the effective coordination of policies, standards, and procedures relating to the procurement of RS and GIS resources. In addition, ITS is responsible for development, operation, and maintenance of a delivery system infrastructure for GIS data. Also codified in the Coordinating Council's legislation, the Mississippi Department of Environmental Quality (MDEQ) was given responsibility for program management, procurement, development, and maintenance of the Mississippi Digital Earth Model (MDEM), which will include the following seven core data layers:

1. Geodetic Control
2. Elevation and Bathymetry
3. Orthoimagery
4. Hydrography
5. Transportation
6. Government Boundaries
7. Cadastral

Action:

- Work with the Coordinating Council to develop an enterprise strategy to cost-effectively deliver geospatial technology, such as GIS resources and information, to state employees, local government, the federal government, and citizens
- Work, in accordance with the Coordinating Council's direction, with the Mississippi Department of Environmental Quality and other entities to procure the data that will be implemented in the Mississippi Geospatial Clearinghouse (MGC) (***www.gis.ms.gov***).
- Foster collaboration between Mississippi Emergency Management Agency (MEMA), ITS, MDEQ, Mississippi Office of Homeland Security (MOHS), and MS Analysis and Information Center (MSAIC) in the use of spatial data in the analysis and response to emergencies, breeches in security, and criminal activity
- Seek geospatial application growth opportunities with agencies in the development of web-based GIS applications, which leverage the enterprise infrastructure and data of the Mississippi Geospatial Clearinghouse

- Continue efforts to development and enhance the content of easily categorized and downloadable data from the Mississippi Geospatial Clearinghouse
- Focus outreach efforts to include federal, state, and local entities seeking an interface to the Mississippi Geospatial Clearinghouse

Strategy 2: Serve as a Strategic Partner on Health IT and Health Information Exchange Initiatives

In March 2007, through Executive Order 979, Governor Haley Barbour established the Mississippi Health Information Infrastructure Task Force for the purpose of improving the quality and safety of healthcare delivery by means of the expedited adoption and implementation of Health Information Technology (HIT) and Health Information Exchange (HIE) across the state. The Executive Order directs a 20 member task force to review issues surrounding the creation of a statewide and interstate HIT infrastructure and to present its recommendations to the Governor within two years. The issuance of the Governor's Executive Order has occurred at a pivotal point in both the national progress of health information dissemination and in the context of many local implementations of HIT within Mississippi.

Action:

- Continue ongoing support for the Mississippi Health Information Infrastructure Task Force via active participation in recommended activities regarding staffing requirements, funding options, and milestone dates necessary to achieve the Executive Order goals within the two year time frame
- In addition to serving on the Mississippi Health Information Infrastructure Task Force, continue working with the Technical/Interoperability Work Group in addressing the IT-related issues associated with implementing HIT and HIE, and developing recommendations concerning technology standards, infrastructure, and technical operations
- Support Information & Quality Healthcare (IQH), by the implementation of the award of RFP 3560, which seeks proposals for the acquisition of the hybrid system of a clinical data repository/health information exchange for the Mississippi counties of Hancock, Harrison, Jackson, Pearl River, Stone, and George
- Support the Division of Medicaid and the University of Mississippi Medical Center in the Rural Health Care Pilot Program (RHCPP), sponsored by the Federal Communications Commission (FCC), designed to significantly increase access to acute, primary, and preventive health care in rural America

Strategy 3: Coordinate Wireless Communication Solutions

Senate Bill 2514, passed during the 2005 Legislative Session, created the Mississippi Wireless Communication Commission (WCC) and Legislative Advisory Board. The WCC, which is comprised of representatives of state and local governmental entities, is charged with making recommendations and developing strategies for achieving interoperability to ensure that effective communications services are available in emergencies.

Action:

- Promulgate rules and regulations governing the operations of wireless communications systems, in conjunction with the WCC

- Develop a plan for statewide wireless communications, including voice and data, with the WCC and its Advisory Board
- Collaborate on the implementation of RFP 3429, issued on behalf of the WCC, for the acquisition and three-phase deployment of a statewide, public-safety grade, seamless roaming, and digital, trunked land mobile radio system
- Collaborate on the implementation of RFP 3489, issued on behalf of the WCC, for statewide cellular services, designed to encourage the statewide build-out to deploy cellular voice and data services statewide
- Investigate the utilization of a common governing structure for managing and directing wireless projects and operations across state entities, focused on improving the effectiveness of wireless communications and serving as the foundation for the interoperability needed to protect the health and safety of Mississippi citizens

Strategy 4: Initiate Innovative Procurement Strategies and Practices

ITS assists state agencies, universities, community colleges, and governing authorities with the acquisition of IT hardware, software, and services. An ongoing initiative is the re-engineering and continuous improvement of processes and procedures through both strategic and incremental changes. Improvements to the procurement process focus on the following initiatives with the goal of providing better service to our customers and cost savings to the state.

Action:

- Facilitate dialog between the ITS Board and customer agencies and institutions on technology strategy and initiatives
- Coordinate the procurement process with the IT planning process to address customer requests and technology direction more proactively
- Identify and promote opportunities for utilization of existing technical resources in lieu of procuring redundant equipment and products
- Incorporate the technology procurement process into the overall E-Government initiatives of Mississippi's state government
- Make the procurement process more accessible to both vendors and procurement customers by expanded utilization of web-enabled applications, including:
  - Web publication of Request for Proposals (RFP) content and advertisements
  - Publication of Express Products Lists (EPL) with search and configuration capabilities
  - Dynamic presentation of procurement status information
  - Publication of agendas for ITS Board meetings (upcoming and historical)
  - Publication of procurement outcome information, including awarded vendor and contract amount
- Continue to evolve and standardize best practices for RFP format and content, proposal evaluation methodologies, and vendor contracting
- Work with manufacturers and re-sellers to establish an EPL business model that provides customers with a choice of current technologies in a timely and cost-effective manner

- Continue the implementation of a project management methodology for strategic projects in state government, focusing on meeting the stakeholders' objectives and on effectively identifying and managing project risks
- Utilize an Independent Project Oversight Coordinator role to perform periodic assessments on strategic IT projects
- Improve the internal ITS procurement process, emphasizing consistent, appropriate, and timely processing of all requests, plus effectively responding to seasonal work load fluctuations caused by customer funding constraints
- Identify opportunities to appropriately delegate additional authority and responsibility for routine technology procurements to agencies and institutions
- Pre-approve commodity-level procurements at plan review time for agencies and institutions with comprehensive technology plans
- Provide proactive training to the vendor and customer communities regarding procurement law and procedures, timelines, and best practices
- Seek input from the vendor and customer communities regarding their technology directions and the impact of procurement procedures upon their business models and the state's Enterprise Architecture
- Coordinate the requirements of multiple customer entities in developing procurement instruments that leverage the state's combined purchasing power to achieve the best possible discounts for technology products and services

Strategy 5: Investigate the Implications and Business Efficiencies of Providing Unified Messaging

The decentralized nature of the state's email systems has resulted in noteworthy inefficiencies. There is no common address book for cross-agency interaction, and calendaring activity is limited to each agency's email system. These systems are all based on a wide variety of different mail implementations. Many are antiquated and some are based on public mail systems such as Yahoo. There is no common naming convention, making it difficult to ascertain email addresses.

Action:

- Research the potential cost savings and operational efficiencies gained by implementing a standard messaging architecture containing a common mail directory
- Solicit executive support for an effort to standardize the messaging platform across state government in order to build consensus among agencies
- Investigate the significance in building the central email system prior to agency engagement in order to clearly demonstrate concrete value to cautious agencies and more effectively build a valuable business case
- Research and document the potential for lowering overall costs, significantly improving uptime, expanding email features, and enhancing cross-agency efficiencies
- Examine the value in a common, unified network and directory services, in the ability to deploy new applications and lower the deployment cost of new applications

Goal 4

PROMOTE THE MANAGEMENT AND FUNDING OF IT AS A STRATEGIC INVESTMENT

Strategy 1: Raise Awareness and Seek Alignment of the IT Investment Process

The National Association of State Chief Information Officers (NASCIO) and the National Governors Association (NGA) strongly emphasize the need for a strategic IT investment process which ensures that state agencies utilize innovative, smart buying, and investment techniques. With IT becoming a critical component of state government infrastructure, many states have focused on using IT to solve problems in government operations. However, choosing an IT application requires a strong case that it can better meet citizen's needs, facilitate business-government interactions, and improve internal government processes, at reasonable cost and with ease of implementation. Currently, the budgeting and funding of IT within Mississippi state government is accomplished on an agency-by-agency basis. Many examples exist which Mississippi can leverage to accomplish an increasingly strategic investment of IT resources, including strategically planning for upgrades, transferring cost savings to fund applications, and implementing return on investment programs.

Action:

- Identify, develop, and invest in shared services
- Investigate enhancing the oversight of IT to include more input and direction from the state's executive and legislative leadership with aims to achieve economies of scale, increase accountability, and implement enterprise-focused solutions, which address the whole enterprise of state government across all functions and enables the use of common software, hardware, communication systems, data applications, and professional service contracts
- Consider enhancing the accountability of IT to enable strategic technology projects to be critiqued and prioritized by the state's executive and legislative leadership, with funding appropriated via a separate budgeting process and management monitored and reported though a Project Management Office
- Improve current, traditional IT funding approaches with an expansion and wider adoption of innovative and alternative funding models focused on enabling the state to deliver savings and improve services to citizens
- Investigate the transfer of savings from shared service IT initiatives to fund applications and upgrades

Strategy 2: Develop a Technology Blueprint that Drives Improved IT Coordination and Investment

A technology blueprint depicts the technology components for a statewide IT system. It is a holistic, comprehensive plan for a government enterprise that integrates information and services across agency boundaries. A technology blueprint, often referred to as Enterprise Architecture, supports the coordination of various IT support functions. It also can create and enforce statewide standards for data, security, purchasing, management, and operational procedures.

Action:

- Implement a standards-based blueprint for the state's use of technology, which addresses the whole enterprise of state government and enables data sharing across

all government functions to enable the use of common software, hardware, communication systems, and data applications

- Optimize shared technology components, including mainframe computers, email systems, data centers, servers, vendor platforms, storage, help desks, applications, and networks, to reduce initial purchase and ongoing maintenance costs, ensure better use of existing IT assets, and promote interoperability
- Review existing policies, standards, and guidelines for consistency and improvement
- Work with agencies to identify and review business processes that are common across multiple agencies
- Support interagency efforts regarding collaborative initiatives for specific business areas, such as GIS, employment security, retirement systems, and human services
- When appropriate, develop a business case that considers alternatives and recommends actions related to future shared services that will deliver cost savings and value to agencies

Goal 5

PROVIDE INNOVATIVE AND TIMELY IT TRAINING TO ALL LEVELS OF STATE EMPLOYEES

Strategy 1: Provide Online Learning as an Alternative to Instructor-Led Training

The use of web-based training is growing rapidly. This technology allows training at the employee's desktop. More and more vendors are offering courses required for various certifications through technology-delivered instruction. ITS provides self-paced, online training to Mississippi public entities via the Internet. State agencies, county and local governments, public schools, community colleges, and institutions of higher learning are eligible to participate. There are currently over 1,000 courses in technical, end user, and professional development topics; and new courses are added quarterly. Training is available anywhere, anytime. ITS will continue to offer a variety of IT-related topics using this media.

Strategy 2: Provide Training for End Users in the Use of Technology Products

ITS provides an ongoing educational program designed to enhance and improve the skills of state employees who develop or use information systems. The curriculum is continually updated to keep pace with changing technology. Instructors who are qualified through education and experience provide formal classroom instruction. Hands-on training is provided in state-of-the-art computer laboratory facilities. ITS also provides customized information systems training for Mississippi public entities upon request.

Strategy 3: Implement Training to Encompass New Technology Skills Needed for IT Initiatives

Training for new initiatives such as GIS and Remote Sensing will be needed as more agencies and local governments begin utilizing these technologies. ITS will provide training as needed in these technologies for government entities. As other new technologies are adopted, efforts will be made to address related training.

Action:

- Provide self-paced, online training to Mississippi public entities via the Internet
- Provide continuous curriculum updates to keep pace with changing technology

- Provide customized information systems training for Mississippi public entities upon request
- Increase number of course offerings to keep pace with technology, new products, and new releases of software, either through instructor-led training or online learning
- Provide a comprehensive information systems training program for end users, technical, and managerial personnel
- Upgrade lab facilities to provide training on new products and new releases of software

TECHNOLOGY SERVING MISSISSIPPI

Each year, state agencies in Mississippi work to enhance government services by intelligently leveraging technology to implement strategic systems. The systems featured in this year's "Technology Serving Mississippi" section of the *2009 – 2011 State of Mississippi Strategic Master Plan for Information Technology* provide improved services to citizens, businesses, and state employees through the implementation of innovative IT applications.

MISSISSIPPI'S ACCOUNTABILITY SYSTEM FOR GOVERNMENT INFORMATION AND COLLABORATION

The Department of Finance and Administration (DFA), Office of the Mississippi Management and Reporting System (MMRS), has completed the process of identifying and quantifying requirements for the possible replacement of the state's core administrative systems – Statewide Automated Accounting System (SAAS), Statewide Payroll and Human Resource System (SPAHRS), Mississippi Executive Resource Library and Information Network (MERLIN), and supporting subsystems. This project, known as Mississippi's Accountability System for Government Information and Collaboration (MAGIC), is a strategic, multi-stage effort with the desired outcome (over time) of implementing a comprehensive enterprise resource planning (ERP) system for the state.

KEY FACTORS DRIVING THIS PROJECT ARE:

- A large part of the state's institutional knowledge is at retirement age, making it imperative that the state look to the future while that intellectual capital is still available
- There are several critical inefficiencies in the state's current systems, including grant management, vendor management, and budget preparation

The state has outlined a careful, phased-in approach to assess and plan for its future technology needs. Phase I of MAGIC, completed in 2006, consisted of an in-depth series of benchmark surveys for the overall functions of finance, human resources, payroll, procurement, and IT. Review and analysis of the benchmark surveys provided a baseline of the state's current operating costs and processes. The results of these surveys are available on the MMRS website (***www.mmrs.state.ms.us***).

Phase II of MAGIC, Planning and Design, started in early 2008. During this phase, DFA/MMRS, in conjunction with a cross section of state agencies, boards, and commissions, identified and documented the state's requirements and processes.

Throughout this process, the risks and costs of going forward, versus not going forward, were identified and evaluated to determine the state's next steps and how to best communicate that recommendation.

During Phase II, we learned that multiple state agencies were researching possible software solutions to satisfy their reporting and accountability for grant management needs. As we studied ERP solutions to address this need, it became apparent that ERP packages lacked grant management capabilities and only provided grant accounting functionality. In addition, legislation passed at the federal level, i.e., Federal Funding Accountability and Transparency Act (FFATA), and at the state level, i.e., Mississippi Accountability and Transparency Act of 2008 (MATA), has expanded the scope of grant reporting to not only include reporting at the award level, but also at the sub-award level. Additionally, reporting requirements have been expanded to include the location of the entity receiving the awards (including the city, state, congressional district, and country), the location of the primary place of performance under the award (including four data elements for the city, state, congressional district, and country), and the source

of authority to expend the funds. These mandates are requiring agencies to expand their scope of data to address these reporting needs.

In order to achieve maximum reporting and accountability for grants, DFA/MMRS is leading a statewide initiative entitled Grants Operation and Lifecycle Solution (GOALS) to purchase and implement software needed to track grant and sub-grant information. The implementation of GOALS will develop a central repository of information that can be used to respond to the reporting needs of the agencies, state government, federal government, and the general public for grants and sub-grants. GOALS will be the grants management and reporting module for MAGIC.

The state will base its next MAGIC steps for the remaining functionality on the outcomes of Phase II. Options include implementing an ERP solution in a phased approach, implementing an ERP solution to include all functional modules simultaneously, or enhancing the current systems architecture without implementing an ERP. Costs and associated risks are being evaluated at this time, and a recommendation for moving forward is expected to be delivered, along with a funding plan and business case, not later than February 2009. Regardless of the route chosen, DFA/MMRS is committed to exercising a proactive stance to ensure that the state keeps up with the latest technology to provide the best services to the state.

UNIFORM COMMERCIAL CODE (UCC) FILING SYSTEM

The Mississippi Secretary of State (MSOS) is statutorily mandated to administer the Mississippi Corporation Law, the Uniform Commercial Code, the state's trademark and servicemark laws, service of process, and issuance of notary commissions. The Business Services Division (SSD) of the MSOS is responsible for filing all documents relating to business formation and also serves as the official filing officer for documents required under the Uniform Commercial Code; Mississippi adopted the Revised Article Nine of the Uniform Commercial Code (UCC) in 2001.

The UCC and Corporate filing system currently utilized by the MSOS' Business Services Division (BSD) has reached the end of its life cycle and no longer provides the functionality required to meet the needs of the division. The BSD is seeking a replacement system which must administer, at a minimum, the statutorily required filing and application functions described above, namely: enhanced online filing functionality with features that will encourage use by the public, the ability to interface with the state's E-Government portal, and allow redaction of sensitive information. Other business related documents legislatively mandated to be filed with the division are limited in volume and frequency of filing, but will require imaging and storage and must be available for searching purposes.

MSOS will select a software solution that utilizes state of the art technology and provides for:

- A high technical level of development to increase system life expectancy
- A high level of system security
- An accounting interface
- A document management system
- The scheduling of tasks
- User defined and managed business rules
- A web interface which can function independently of the primary MSOS web site
- Document search capabilities via both internal application and internet web interface
- Rejection and acceptance processing of documents
- Verification and examination of documents at various stages prior to acceptance or rejection

- Redaction of certain information contained in the documents using both system automation and user initiated
- Downloading of documents and lists based on subscription services
- Shopping cart functionality
- Correspondence with filers and other parties, both internally and externally, via US mail and email

In addition, the selected solution is expected to offer workflow tools, executive dashboards, and predefined and customized reporting capability with web services technology.

PENSION ADMINISTRATION SYSTEM

The Public Employees' Retirement System (PERS) of Mississippi, a governmental defined benefit pension plan qualified under Section 401(a) of the Internal Revenue Code, is the retirement system for nearly all non-federal public employees in the state. PERS serves a customer base of more than 164,000 employees working in state government, public schools, universities, community colleges, municipalities, legislature, and highway patrol. The retirement system also provides retirement benefits to nearly 78,000 retirees monthly, totaling more than $1.4 billion dollars annually in benefits.

Mississippi was one of the first public pension funds in the United States to convert from a mainframe system to a client server computing environment. During 1995 through 1999, PERS replaced its line-of-business (LOB) mainframe computer based system with a client server Windows based pension administration system called "Genesis." "Genesis" was developed in a 4th Generation Object Oriented Language called Forte and is supported by a Microsoft SQL relational database management system.

This system has served PERS well; however, as technology changes, so do the needs and demands of customers. The Forte development environment is no longer a supported programming platform, it does not support web enabled functionality, and is very difficult to integrate with third party software and newer operating systems.

PERS is now embarking on a major project initiative with the goal of implementing a new pension administration system. The new pension system will be rich in browser-based and web-enabled self-service functionality, providing ease of use not only to PERS staff, but also to members, retirees, beneficiaries, and employers. The major components of the new system will include:

- Core line-of-business (LOB) functions, which include the applications that permit the agency to perform all of its operations
- Integration of the pension administration system to the existing financial management system and replacing all existing interfaces with state agencies, banks, etc.
- Support for the execution of all processes required in accordance with enabling legislation, board policies, statutes, regulations, etc.
- Installation and configuration of a new Electronic Document Management System to replace PERS' existing imaging system
- Integration of imaging, workflow management, collectively also known as Enterprise Content Management or ECM, with the LOB solution
- Business Process Reengineering (BPR) of PERS' current business processes as necessary to increase processing efficiency and take best advantage of the LOB solution
- Web/Internet-based self-service functionality to improve access to PERS by members, retirees, and other appropriate stakeholders

- Replace and/or upgrade the necessary hardware and network infrastructure to support the new system

In September 2008, PERS issued a Request for Proposal to solicit proposals from vendors having experience in the implementation of integrated pension and benefits administration solutions in the public sector. Proposals were received on October 31, 2008, and a thorough evaluation of the proposals is currently underway. PERS plans to complete the evaluation process and select a winning vendor in early 2009. The project is estimated to take approximately three years to implement.

TRANSPORTATION FINANCIAL MANAGEMENT SYSTEM

In the early 1990s, Mississippi Department of Transportation (MDOT) worked with ITS to replace its antiquated financial system with a new application that would not only be state of the art for its time, but would be flexible enough to accommodate both institutional and technological changes for the future. From this beginning – incorporating a new application fully into MDOT's and the state's Strategic Long Range Plan – MDOT's Financial Management System (FMS) was implemented July 1, 1998. The 10th anniversary of FMS has just passed, and the system has been continually adapted to changing conditions of state government. Examples include:

- As data has accumulated over the years, FMS has become more than a repository of accounting data. We are now able to use the FMS data, for example, to predict cash positions that include construction project positions based on historical outlays.
- After Hurricane Katrina struck Mississippi, it took several weeks before the Federal Highway Administration determined all the reporting requirements for reimbursements. Data was being collected from events on the ground prior to this determination at a detailed level such that MDOT was able to report expenditures and receive reimbursements within a day of the determination.
- MDOT has been scanning invoices and attaching them to the invoice data in FMS, thus reducing paperwork and expediting payments to our vendors.
- Increasingly, FMS has been modified to serve as a back end to our line-of-business applications. For example, MDOT maintenance workers enter their activities into the Maintenance Activity System (MAS). This data is pulled into the financial system, where all the accounting codes and controls are taken care of without the maintenance workers needing to understand anything about these codes and controls.
- Likewise, in September 2008 as the Highway Trust Fund was running out of money, the Federal Highway Administration (FHWA) conducted a conference call with all the states requesting a modification to the billing submission to ensure an uninterrupted cash flow. MDOT's FMS system was flexible enough to allow this temporary adjustment.

The capabilities of MDOT's Financial Management System not only contribute directly to the sound financial position of the state, but indirectly, by facilitating greater worker productivity, help ensure that taxpayer dollars allocated to MDOT are generating increasing benefits to the public.

DEPARTMENT OF REHABILITATION SERVICES MODERNIZATION

WEBID IDENTITY INFORMATION SOFTWARE PROJECT

The Mississippi Department of Rehabilitation Services (MDRS) has finished stage one of WebID software conversion which provides redesigned ID Badges for the agency's 1000+ employees. Stage one of this project also includes an Intranet accessible directory of the agency employees with addresses, phone numbers, and email addresses. Additional stages of this project will include emergency contact

information and other information that the agency may decide to maintain in the future. Also, in the future, the system will be used to help track MDRS clients, providing needed support in disasters.

ACCESSIBLE AUTOMATED CASE ENVIRONMENT (AACE) PROJECT

AACE is the agency's main Case Management System used by Vocational Rehabilitation, Vocational Rehabilitation for the Blind, Special Disability Programs, Assistive Technology, Ability Works, the Reach Center, and the Addie McBryde Center for the Blind. It is utilized for managing information about MDRS' clients. It produces reports for management and federal/state requirements. MDRS is nearing the completion of an 18-month project to convert AACE to Microsoft .NET platform, Active Reports, and SQL 2005. Alliance, the software provider for AACE, converted the generic part of the software; however, the agency has numerous customized screens and reports that the agency is responsible for converting. In addition, all 800+ users of the system are being trained on the converted system.

NOVELL TO MICROSOFT NETWORK CONVERSION PROJECT

MDRS is in the process of migrating from Novell NetWare to Microsoft Windows Server as our network operating system. The decision to change was based on several factors, including NetWare's end-of-life status, the ease of integrating Windows Server into our current application server and workstation environment, and third-party vendor product support for Windows Server. Currently, four servers have been converted to Windows Server 2003 R2 domain controllers and have brought eight Server 2003 R2 application servers into our domain as member servers. An additional 26 file and print servers at agency field offices, which will be converted to domain controllers, as well as one additional application server will be brought into the domain as a member server. Currently, approximately 60 employees have switched to the Windows network. The migration will continue in the December 2008 – January 2009 time frame, once the agency has completed the transition to Version 5 of the AACE client management application software. The migration to Windows Server will be completed within the first half of calendar year 2009. This project affects the entire agency with the exception of the Office of Disability Determination Services (DDS). DDS is on the Social Security Administration's network, which already uses Windows Server as its network operating system.

DISABILITY DETERMINATION SERVICES CASEEXPERT SYSTEM PROJECT

DDS is a federally-funded program of MDRS. CaseExpert is the DDS case management system. It is used to keep track of medical evidence from a multitude of sources as well as track the case through the determination process, which involves examiners, case consultants, physicians and others. Over the last couple of years, MDRS has worked with the Social Security Administration to overhaul the application in an effort to convert existing paper cases to an electronic format. MDHS also added systems to allow physicians, hospitals, and copy services to submit new medical evidence electronically. Medical evidence can be transmitted to the DDS by fax, uploaded to a secure website, or submitted online in bulk using a secure transfer protocol. MDHS averages 75,000 cases per year. Mississippi was the first state in the country to convert all initial cases to the electronic format.

TECHNOLOGY FOR INTERGOVERNMENTAL COLLABORATION

GEOGRAPHIC INFORMATION SYSTEMS (GIS)

The Mississippi Geospatial Clearinghouse (MGC) serves as the state's premier portal for the Geographic Information System (GIS) community to search, discover, share and use a comprehensive warehouse of Mississippi's geospatial resources. Moreover, the MGC is the primary location for the Mississippi Digital Earth Model (MDEM). The seven framework layers comprising MDEM are the standard components of digital maps used by GIS communities throughout the world. These layers consist of:

- Geodetic Control – Coordinate Positions
- Ortho-Imagery – Aerial Photography
- Bathymetry – Elevation
- Hydrography – Water Features
- Transportation – Roads, Bridges, Waterways, etc.
- Governmental Boundaries – Geographic Units of Government
- Cadastral – Ownership of Property

The goal of the MGC is to make the application of spatial information technologies within the state of Mississippi more efficient by eliminating the duplication of spatial data production and distribution through cooperation, standardization, communication, and coordination.

State agencies, county government, city government, and the public can download data that has been stored in MDEM. This data provides the foundation for applications to be developed using GIS technology to meet the business needs of governmental agencies and public interest. Some of the projects that have been initiated using the geospatial data stored in the MGC are listed below:

MISSISSIPPI DEVELOPMENT AUTHORITY

The Mississippi Development Authority (MDA) Asset Development/Regional Services Division is in the process of developing a GIS application using the resources of ITS and the MGC. The application is being developed in phases and will display community assets in a geographical format.

MISSISSIPPI DEPARTMENT OF ARCHIVES AND HISTORY

The Mississippi Department of Archives and History (MDAH) is in the process of developing a GIS application using the resources of ITS and the MGC. The application will allow the agency to present state historical information and assets in a geographical format. This application will have a secure internal component that will allow the agency to track assets and a public component that will allow the assets to be available to the public via the web.

MISSISSIPPI ARTS COUNCIL

The Mississippi Arts Council (MAC) in partnership with MDA's division of tourism is in the process of developing a GIS application using the resources of ITS and the MGC. The application will provide a standardized mapping component for all of Mississippi's resources collected by the two agencies. In

addition, data will be provided by other agencies to allow a complete picture of Mississippi for the state's tourism industry.

HEALTH INFORMATION TECHNOLOGY (HIT)

In March 2007, through Executive Order 979, Governor Haley Barbour established the Mississippi Health Information Infrastructure Task Force for the purpose of improving the quality and safety of healthcare delivery by means of the expedited adoption and implementation of Health Information Technology (HIT) and Health Information Exchange (HIE) across the state. The Executive Order directs a 20 member task force to review issues surrounding the creation of a statewide and interstate HIT infrastructure and to provide its recommendations to the Governor within two years.

The first milestone for the task force was the development of an action plan for Mississippi Health Information Infrastructure, published in October of 2007. The plan detailed recommended activities, staffing requirements, funding options, and milestone dates necessary to achieve the executive order goals within the two year time frame. Specifically, in addition to serving on the task force, ITS is also collaborating with members serving on the Technical/Interoperability Work Group. The proposed charter of this work group includes addressing the IT-related issues associated with implementing HIT and HIE and developing recommendations concerning technology standards, infrastructure, and technical operations.

As a result of the work accomplished by the task force, the Office of the Governor was able to secure funding to establish a coastal Mississippi hybrid clinical data repository/health information exchange. ITS provided technical advice and oversaw the procurement process for RFP 3560, developed for Mississippi Foundation for Medical Care, Inc. dba Information and Quality Healthcare (IQH).

The primary goal of this RFP is a restructuring effort to improve patient care delivery in Mississippi, particularly for Pearl River, Stone, George, Hancock, Harrison, and Jackson counties. These are the state's six coastal counties that were most affected by Hurricane Katrina. As a proof-of-concept, the MS Coastal Health Information Exchange (MSCHIE) was formed and will begin concentrating on these six coastal counties while focused on integrating patient information and linking providers on an interoperable network to improve patient care and reduce costs. The long-term vision is the formation of a statewide hybrid clinical data repository/health information exchange, so as the exchange matures and expands, the network would benefit all Mississippians.

After the completion of the procurement process for RFP 3560, Medicity Inc. received a notice of award from IQH on September 20, 2008 as the best technical and lowest cost vendor. Subsequent contract negotiations have been finalized and implementation has begun for the hybrid HIE/data repository with hopes of live data being exchanged amongst the initial stakeholder by the middle of March 2009.

The Federal Communications Commission has also dedicated funding for construction of 69 statewide or regional broadband telehealth networks in 42 states and three U.S. territories under the Rural Health Care Pilot Program (RHCPP). The RHCPP will connect more than 6,000 public and non-profit health care providers nationwide to broadband telehealth networks. These networks will provide patients from rural areas telehealth and telemedicine services from medical specialists from other areas of the country. These networks can also provide, around-the-clock monitoring of critically ill patients by intensive care physicians and nurses. There is also the additional capability of video conferencing with specialists and mental health professionals, which are often hundreds of mile away, thereby giving patients in rural areas access to medical expertise normally only available in metropolitan areas.

Two health-related IT projects were selected as Mississippi pilots:

- The "As One-Together for Health" project, developed by the Division of Medicaid, seeks to establish a new statewide non-dedicated telehealth network connecting approximately 260 facilities through web-based conferencing tools running on commodity Internet and Internet2 connections
- Upgrades to the existing TelEmergemcy network at the University of Mississippi Medical Center that could extend coverage to approximately 90, mostly rural, facilities providing telehealth, web-based patient education, and links to the university's knowledge base

WIRELESS COMMUNICATIONS AND INTEROPERABILITY

Interoperability in wireless communications is generally defined as the ability to communicate on demand and in real time, across multiple agencies and local jurisdictions, exchanging voice and/or data when needed and as authorized. Currently, this ability does not exist in Mississippi on a statewide basis. This lack of communication is a nationwide problem highlighted by the tragedies of recent years, from the events of September 11 to the disasters of Hurricanes Katrina and Rita. The lack of a common communications system severely hampered the response to these events.

Senate Bill 2514, passed during the 2005 Legislative Session, created the Mississippi Wireless Communication Commission (WCC) and Legislative Advisory Board. The WCC, comprised of representatives of state and local governmental entities, is charged with making recommendations and developing strategies for achieving interoperability to ensure that effective communications services are available in emergencies. The legislation, now codified in Mississippi Code §25-53-171, states that the WCC, in conjunction with ITS, shall have sole responsibility to promulgate rules and regulations governing the operations of wireless communications systems. The WCC and its advisory board are working to develop and implement plans for statewide wireless communications, including voice and data.

In March 2006, ITS issued RFP 3429 on behalf of the WCC for the acquisition and three-phase deployment of a statewide, public-safety grade, seamless roaming, digital, trunked land mobile radio system. The Mississippi Wireless Information Network (MSWIN) system will be designed to accommodate state agencies, local governments, and other first responders.

Motorola, Inc. was awarded the contract in the second quarter of 2007. MSWIN will be implemented in phases beginning in the southern part of the state and progressing northward. Phase 1, the southern third of the state, is scheduled to be operational in June 2009. Site identification is complete in the central part of the state and in progress in the northern third.

In another key wireless initiative, the WCC and ITS issued RFP 3489 for statewide cellular services and awarded the contract to Cellular South in the second quarter of 2007. The WCC intends for this contract to encourage a statewide build-out to deploy cellular voice and data services statewide. The majority of state agency cellular usage has been converted to the new contract, and significant numbers of county and municipal governments are taking advantage of the contract pricing structure.

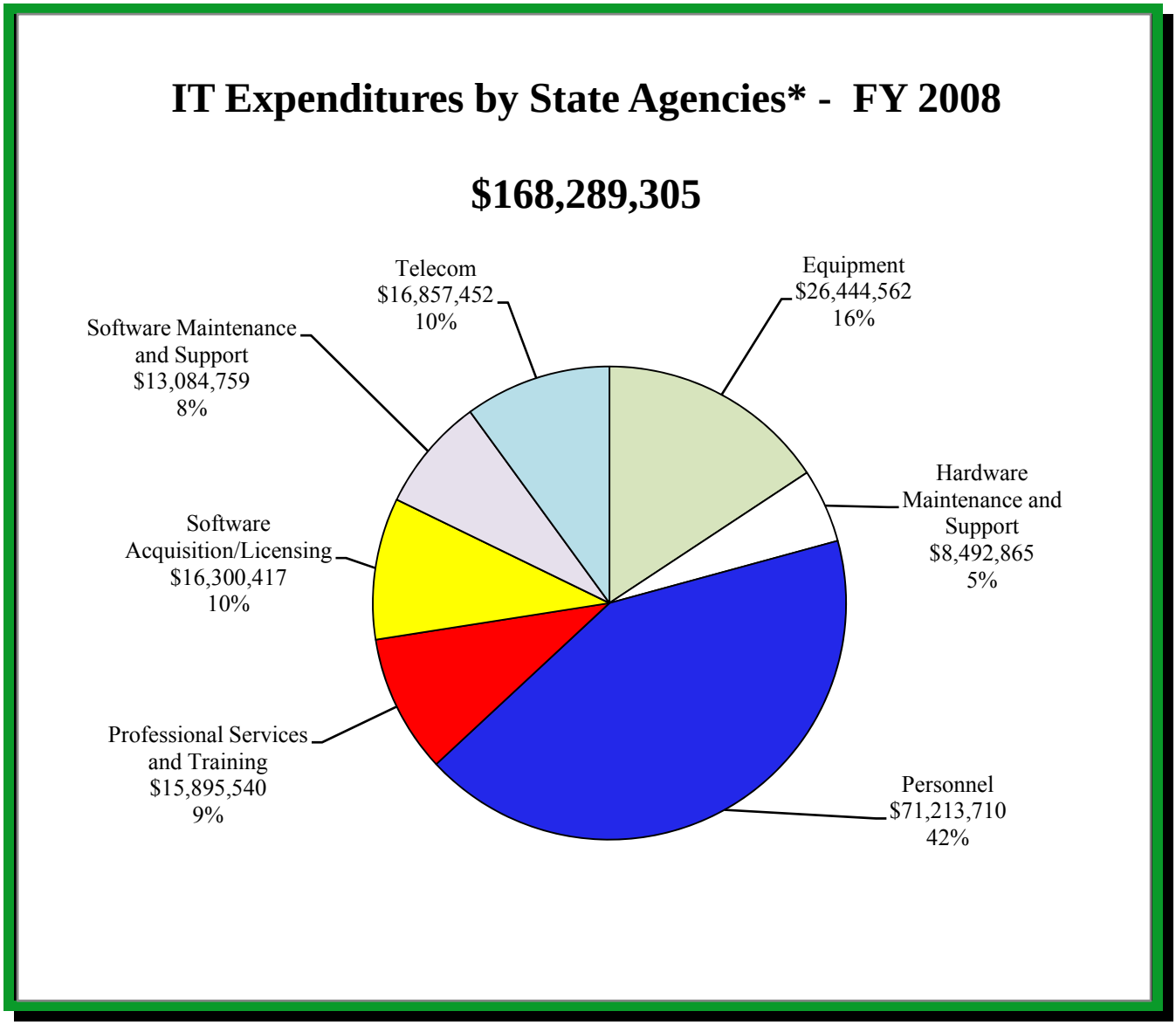
Wireless communications and interoperability are ongoing, high cost, and highly complex initiatives impacted by the rapid expansion of available wireless solutions. The state and the WCC must consider and address short, middle, and long-term needs for achieving seamless wireless voice and data communications across all entities, disciplines, and jurisdictions. A common governing structure for managing and directing wireless projects and operations across state entities will improve the

effectiveness of wireless communications and serve as the foundation for the interoperability needed to protect the health and safety of the citizens of our state.

To address these and other strategic issues related to statewide wireless communications, ITS, at the request of the WCC, developed a procurement instrument to obtain the services of qualified wireless communication and systems integration vendors. The WCC is considering the services of one or more vendors on an as-needed basis to address such areas as project implementation, governance, and technology integration to achieve effective interoperability.

ENTERPRISE STATISTICS

IT EXPENDITURES BY STATE AGENCIES – FY 2008



* Payments to vendors by schools, libraries, community colleges, universities, or any other governing authorities are not included. Salary expenditures for state IT personnel are included. The expenditures reflected are as categorized in the Statewide Automated Accounting System (SAAS) and are only as accurate as the information entered by the state agency at the time the funds were expended.

E-RATE

The Schools and Libraries Program (***www.universalservice.org/sl***) was established by Congress to help make advanced telecommunications affordable for the nation's K-12 schools and libraries. It provides discounts on the costs of eligible telecommunications services, Internet access, and internal connections ranging from 20% to 90%. The highest discounts go to the schools and libraries serving the most disadvantaged populations. The majority of E-Rate funds have gone to the most disadvantaged schools and libraries, where over 50% of the students in the district qualify for the National School Lunch Program.

In the ten years of the E-Rate program, schools and libraries, nationwide, have received over twenty billion dollars. The following table reflects the amount received by Mississippi.

Funding Year	Mississippi's E-Rate Funding
1998	$24,347,085
1999	$32,867,163
2000	$29,951,288
2001	$34,769,964
2002	$33,760,747
2003	$38,795,195
2004	$43,511,641
2005	$41,086,055
2006	$37,116,359*
2007	$34,003,623*
2008	$26,538,926*
TOTAL	**$376,748,046**

*Some funding requests for 2006, 2007, and 2008 remain under review.

STATEWIDE NETWORK STATISTICS

Statistics 1998 - 2008	
Growth (Number of End Sites Connected)	2100 to 2700
Types of circuits available	3 to 100+
Speeds of circuits available	64K – 1Gb
Internet (Cost per megabit)	$1129/mo to $50/mo
Internet Capacity	3M to 2.2Gb
Backbone (Cost per megabit)	$224/mo to $25/mo
Backbone Capacity	186M to 800M

MISSISSIPPI.GOV

- Mississippi.gov averaged 14,000 visits per day
- More than 48,000 Mississippi sportsmen renewed their hunting and fishing licenses or boat registrations electronically using the Department of Wildlife, Fisheries, and Parks' online applications
- The Department of Public Safety's Online Drivers' License renewal application averaged more than 4,600 renewals each month
- More than 52,000 students applied for Financial Aid using the Institutions of Higher Learning's online application
- Over 36,000 transactions took place using the Secretary of State's online applications (UCC Filing, Certificate of Existence, Public Land, and Certificate of Fact)
- Approximately 7,350 physicians renewed their professional licenses using the Board of Medical Licensure's online renewal application
- Nearly 8,760 registered nurses renewed their professional licenses using the Board of Nursing's online renewal application
- More than 4,046 health related professionals renewed their licenses using the Department of Health's online licensing system
- Supported more than 273,500 electronic transactions overall

FUTURE TECHNOLOGY

The Strategic Services division of ITS works with state agencies, institutions, and each division of ITS to perform emerging technology projects, which includes research, testing, assessment, and recommendation of new technologies. Where applicable, the Strategic Services division collaborates with agencies and institutions to implement pilot projects.

Emerging technologies targeted for research must have at least one of the following characteristics:

- The public has little knowledge and experience with the technology
- The current technology is in a constant state of change, which affects IT within state government
- The technology is new and on the leading edge

SERVICE ORIENTED ARCHITECTURE

Service Oriented Architecture, or simply SOA, provides a flexible, robust infrastructure to model, assemble, deploy and manage business processes. Service Orientation and Service Oriented Architecture begin with business processes. A service is simply a work or business task. When work or business tasks are tightly linked to IT processing, organizations can realize the benefits of increased flexibility and the ability to more quickly and easily solve new and rapidly changing challenges.

SOA allows for easier management of these work and business processes through the use of flexible IT connections within a well-defined, standards-based interface. SOA services become IT assets that can be re-used extensively in many applications. For several years now, SOA, or services-oriented architecture, has promised to deliver unprecedented flexibility and cost savings to IT by defining a methodology for the use and re-use of software components and business processes. However, SOA is still new, and organizations are still in the process of learning how to implement this new technology so that it fulfills its potential for intra and inter-enterprise services reuse and process interoperability.

SOA promises to be a significant innovation for state government. According to the National Association of State Chief Information Officers (NASCIO), SOA is not just another new technology, but rather a whole philosophy about sharing, decoupling business processes from technology in order to enable a fluid enterprise that can change and change quickly. A number of states are just beginning their SOA efforts, or are in the planning stage for an SOA initiative. State government anticipates SOA is the path to extending legacy applications to handle business processes across government.

ITS is currently working with the Department of Human Services (MDHS) on the Mission Project, with a goal of transforming and integrating the agency's legacy applications to solely rely on the use of Internet technologies. Additionally, ITS continues to investigate the value of SOA, with the goal in mind of enhancing the ability of government to respond to change, and optimize services utilizing differing technologies as vehicles for maximizing the value of IT.

INFORMATION TECHNOLOGY INFRASTRUCTURE LIBRARY (ITIL)

ITIL originated in the United Kingdom in the 1980s as a series of IT Service Management Best Practices intended to aid managers in improving operational efficiencies through the re-thinking of methods and practices. As ITIL has matured over the years, it has been adopted by companies and governments all over the world. To that end, numerous state governments are now looking at ITIL as a way of improving data center, networking, and other IT services.

ITS has completed a project which implemented the Computer Associates (CA) Unicenter Service Desk (USD) within an ITIL framework. This project is operational with continuing automation of performance monitoring and change management. The ITIL processes implemented are the result of a detailed assessment designed to determine what procedural changes needed to be altered in order to significantly improve customer service. The first two phased implementations of the project will be for Data Services and Telecom Services Divisions of ITS, with some agencies and other ITS Divisions monitoring the rollouts.

ENTERPRISE MONITORING

The State Data Center infrastructure continues to grow as ITS offers more and more services to the agencies of the State of Mississippi. ITS is tasked with providing a highly available infrastructure that performs at the level expected by the agencies who access the applications on this infrastructure. To meet expectations, ITS staff must have the system monitoring software available to properly monitor and maintain the systems and network infrastructure. In the past, ITS has used a disparate collection of network and system monitoring tools; however, an integrated, robust system monitoring collection of products is needed within the State Data Center.

ITS has contracted with Computer Associates to implement network and system monitoring software to establish a standard solution. According to independent research, average downtime can cost the typical enterprise 3.6% of its annual revenue and these costs are trending upward. The infrastructure housed in the State Data Center is very complex, relying upon a mixture of legacy and leading-edge technologies to deliver integrated business applications. Individual network, database, application and system components are managed separately and often manually, delivering an enormous amount of non-normalized information to the Data Center for analysis. The product suite from CA, Unicenter, continuously monitors, assesses and correlates events across disparate systems.

In complex distributed operations, such as the State Data Center, Unicenter can unify and simplify infrastructure management and reduce costs. Crucial to this rise in efficiency, is the ability to gather information from a wide variety of platforms, including Windows, UNIX, Linux, AS/400, z/OS, and OpenVMS. This wide analytical view will enable the simplification of managing complex technical infrastructures with a centralized view of the entire infrastructure.

VIRTUALIZATION

Virtualization is a proven technology that allows consolidated devices to be partitioned so that one machine or storage device can run applications or store data for many agencies/departments. Each agency/department would have its own separate and isolated “virtual machine” while sharing a single physical device. Since server utilization in a typical IT shop averages 15 percent, virtualization allows one physical server to replace multiple devices and run many applications, regardless of the agency’s operating system and development platform.

Virtualization offers many benefits to the State of Mississippi. Some of these benefits are listed below:

- Reductions in energy costs
- Reductions in the Server Operations Footprint
- Reductions in Hardware Replacement
- Improvements in System Administration
- Improvements in Security and Disaster Recovery

ITS has recommended consolidation of individual servers and data storage hardware both within and across agencies, optimizing the number of machines and environment-controlled facilities.

LINUX

An open source operating system, Linux can be run on most all computer hardware platforms from desktops to servers to mainframes. The ITS Data Center continues to utilize the open source operating system across multiple platforms.

Currently, Linux is being used to support Web Servers, Data Base Servers and Email Servers in production systems. An application running Linux on the mainframe is being developed for the Mississippi Supreme Court to support a Statewide Court Case Management System.

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